

ACUTE TOXICITY TO FISH (FATHEAD MINNOW)

TEST SUBSTANCE

Identity: Perfluorooctanesulfonylamido(ethyl)acetate; may also be referred to as PFOSAA, FC-128 or as the major component of FC-127, FC-129, FC-109, FC-109-X, FC-4351, or L-6778. (Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt, CAS # 2991-51-7)

Remarks: The 3M production lot number was 501 (F6873). The test sample is L-6778 dried to dryness. Current information indicates it is a mixture of 40% water, 34.4% PFOSAA, 5.6% C₄-C₇ fluoroalkyl carboxylate compounds, 17% isopropyl alcohol, and 3% ethanol.

The following summary applies to the solids portion of a mixture with incompletely characterized concentrations of impurities.

METHOD:

Method: Not noted.

Test type: Acute static

GLP: No

Year Completed: 1982

Species: *Pimephales promelas*

Supplier: Brady, Nebraska.

Analytical monitoring: Temperature, pH, DO

Exposure period: 96-hours

Statistical methods: None. LC50 value greater than highest concentration tested.

Test fish age: Not noted

Average Length and weight: Length = 2.5 cm
Weight = 0.12 grams

Loading: 0.2 g/L

Pretreatment: Not noted.

Test conditions:

Dilution water: Carbon-filtered well water.

Initial dilution water chemistry:

Dissolved Oxygen: 8.7 mg/L

pH: 7.9

Temperature: 20°C

Lighting: Not noted

Stock and test solution preparation: The study indicates a sample of L - 6778 was evaporated to dryness. The method was under N₂ utilizing a 40°C water bath. All test solutions were prepared by direct weights additions of the resulting solid material.

Concentrations dosing rate: Once

Stability of the test chemical solution: Not noted.

Exposure vessels: Wide-mouth 1 gallon glass jars

Number of replicates: blank controls – two. Test substance - none

Number of fish per vessel: 5

Number of concentrations: 4 plus 2 blank controls

Water chemistry during the study:

pH range (24-96 hours):

8.1 – 8.2 (control exposures)

8.3 – 8.3 (1,000 mg/L exposure)

Dissolved oxygen range (24-72 hours*):

6.5 – 7.0 mg/L (control exposure)

6.0 – 7.0 mg/L (1,000 mg/L exposure)

*Dissolved Oxygen values for the 72-hr exposure were used because the values at 96-hours were not legible.

Temperature range (0-96 hours): 21°C

RESULTS

Nominal concentrations: 2 Blank controls, 1, 10, 100 and 1,000 mg/L

Element value: 96-hour LC₅₀ >1,000 mg/L

Element value based on nominal concentrations.

Remarks: Testing was conducted on the solids portion of the mixture as described in the **Stock and test solution preparation** field. The value reported applies to that substance.

Surfacing of some of the test organisms was noted as a sublethal effect for the 100 and 1000 mg/L exposures.

CONCLUSIONS

The dried solids of L-6778 96-hour LC₅₀ for *Pimephales promelas* was determined to be >1,000 mg/L, the highest concentration tested.

Submitter: 3M Company, Environmental Laboratory, P.O. Box 33331, St. Paul, Minnesota, 55133

DATA QUALITY

Reliability: Klimisch ranking 3. Study not conducted in duplicate. Each concentration separated from the previous by an order of magnitude. . The sample purity was not properly characterized and the study lacks analytical confirmation of the amount of fluorochemical proportion in the solutions.

REFERENCES

This study was conducted by the 3M Company, Environmental Laboratory, St. Paul, MN, 3M Lab Request number 8442-2, November, 1982.

OTHER

Last changed: 3/31/01